

PhD Researcher

Position: PhD researcher on solid-state Phase Change Materials (PCM) for thermal energy storage

Offer date: WEB publication

Project: CIIAE – Ref^a PD-solid PCMs (ALMACENAMIENTO DE ENERGÍA TÉRMICA)

Department: Thermal Energy Storage

Estimated starting date: 2023

Workplace:	University of Extremadura. Cáceres campus	
Tasks to be developed:	<p>Solid-state phase change materials (PCMs) absorb or release heat through reversible transitions between a crystalline or semi-crystalline (solid) phase, and another crystalline, semi-crystalline or amorphous (solid) phase.</p> <p>The selected researcher will study PCMs showing structural transitions at different temperature ranges, as well as the enthalpy and thermal conductivity of these materials. The candidate will join the Department of Thermal Energy Storage to develop their doctoral thesis, participating in the research on solid-state PCMs.</p> <p>Selected candidate:</p> <ul style="list-style-type: none"> – Will be trained in different methods of synthesis and characterization of crystalline solids. – will learn how to rationally design PCMs showing high enthalpy phase transitions. – will collaborate with different units at CIIAE to prototype and scale up the most promising PCMs (stable, with high enthalpy and thermal conductivity values) for thermal storage applications. – will present the research results at department meetings, conferences and in scientific articles – Will participate in the preparation of proposals to acquire competitive funding 	
Duration of the contract and salary:	Fixed-term contract. End: September 2025. Possibility of extension.	Gross Salary: 19065,34 €
Academic background required:	Graduate degree in Physics, Chemistry, Chemical engineering, Environmental Sciences or similar To meet the requirements to access into a PhD program	
Other education:	<p>It will be valued to have completed or to be studying a master's degree in Materials for Energy Storage and Conversion, or Nanoscience and Nanotechnology</p> <p>Note: A successfully completed master thesis on a relevant topic (completed or as-advanced-as-possible thesis to be included in the job application. The final, successful thesis will be required for starting with the position)</p>	
Professional experience:	- Not required	
Job requirements	Specific techniques (analytical, software, calculations, prototyping, etc.)	- Office tools.
	Participation and/or collaboration in R&D&I/business projects	- Not required
	Languages	English. Valuable: Spanish and Portuguese.

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	Cross-cutting competences	<ul style="list-style-type: none"> - Ability to work in a team - Communication skills
	Willingness to travel and stay abroad	This position requires occasional travelling outside of Extremadura
	Publications: scientific articles (in journals indexed in Web of Science and/or Scopus), theses (PhD and/or Master's), presentations at conferences, reports, technical reports, technical guides, etc.	Not required.

To be evaluated (adds points to the final evaluation)

- Motivation letter: Please include a letter describing the skills you consider of value for the position
- Reference letters: please provide two reference letters (for example of professors with their contact details). highlighting the technical and soft skills identified by the reference in the candidate, and that are of relevance for the position.
- Academic record
- Experience/competence to be valued:
 - Competence in synthesis and characterization of inorganic and hybrid materials (organic-inorganic).
 - Experience in thermal analyses: Differential scanning calorimetry (DSC) and thermogravimetric analysis (TGA), thermal conductivity.
 - Experience in characterization techniques: XRD, TEM, SEM, FTIR, Raman, NMR, AFM, XPS, etc.
 - Experience in the study of PCMs for thermal energy storage applications, phase change kinetics, charge/discharge rate, etc.
- Having carried out laboratory or R&D work outside of regulated studies.
- Scientific publications / participation in scientific meetings
- Having obtained competitive research contract.
- Patents.
- Awards, mentions or other achievements.

Note: To facilitate the evaluation process, it is recommended to include a list or table, itemizing the merits you consider that should be evaluated for each of the requirements (Ex: Requirement: Experience in DSC measurements. Candidate: brief description of experience in DSC measurements reflected in scientific articles, theses, courses, projects, etc.)

Selection process:

TECHNIQUES: Oral knowledge test YES NO

LANGUAGE: ORAL YES NO **(It will be evaluated during the interview)**

JOB INTERVIEW: YES NO

Interested candidates

Please send all the documentation required in THE CONDITIONS OF THE CALL and THE JOB OFFER, no later than 15 calendar days from the day after publication on the WEB, indicating: **ref^a PD-solid-PCMs (ALMACENAMIENTO DE ENERGÍA TÉRMICA)** to:

FUNDECYT-PCTEX (Edificio Parque Científico Tecnológico), Avda. de la Investigación, s/n - Edificio PCTEX, Campus de la Universidad de Extremadura - 06006 Badajoz (Spain)



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